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AUTHOR Linnell, Julian
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ABSTRACT

This study investigates if negotiation can affect syntacticization in the learning of second language (L2) syntax. Evidence from a number of studies has suggested that linguistic modification occurs during negotiation, but no research has examined if such modifications assist the learning of syntax in a second language. This study examined to what extent these linguistic modifications affect syntacticization, to what extent do different negotiation moves affect syntacticization, and to what extent does negotiation affect syntacticization over time. Data was collected between November 1993 and June 1994, and experimental/control treatments were contained within 10 sessions as 19 L2 learners (aged 18-47 years) participated in communication tasks with native speakers through a computerized writing conference. Subjects native language backgrounds were Korean and Japanese; their Michigan Placement Test scores ranged from 18-62. Results indicate that negotiation could stimulate syntacticization and sustain the process over time. However, comparisons with one control group showed that syntacticization was independent of the type of treatment given. (Contains 61 references.) (Author/NAV)

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Can Negotiation Provide a Context for Learning Syntax in a Second Language?

Julian Linnell

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Can negotiation provide a context for learning syntax in a second language?

Julian Linnell

University of Pennsylvania
Graduate School of Education

Evidence from a growing number of studies has revealed that linguistic modification occurs during negotiation. No research has yet examined whether such modifications assist the learning of syntax in a second language (L2). The present study asks if negotiation can aid one process in the learning of L2 syntax known as syntacticization. The three research questions addressed were: (1) To what extent are linguistic modifications during negotiation evidence of syntacticization? (2) To what extent do different negotiation moves affect syntacticization? and (3) To what extent does negotiation affect syntacticization over time? Evidence suggests that negotiation would integrate and intensify certain key processes in L2 learning and that these would have an impact on syntacticization over time. Experimental/control treatments were contained within ten sessions as 19 L2 learners participated in communication tasks with native speakers through a computerized writing conference. Results indicated that negotiation could stimulate syntacticization and sustain the process over time. However, comparisons with one control group showed that syntacticization was independent of the type of treatment given.

This paper[1] will report a study that was part of a larger research project investigating the extent to which a type of social interaction known as negotiation could assist the learning of syntax in a second language (L2). The study focused on two constructs that originated from very different fields: negotiation and syntacticization. Negotiation was developed in ethnomethodology, conversation analysis, and interactional sociolinguistics (Garfinkel 1967; Goffman 1967; Gumperz 1982) and subsequently introduced to the field of second language acquisition (SLA) (Hatch 1978a, 1978b; Long 1981). Syntacticization, however, was developed in the field of typological linguistics (Givon 1979a, 1979b, 1981), related to grammaticalization (Meillet 1912; Traugott & Konig, 1991), and more recently introduced to second language acquisition (SLA) (Sato 1986; Perdue & Klein 1992).

[1] This article is a revised edition of a paper presented at the Second Language Research Forum, Cornell University, Ithaca, NY, October 1995.

This article will first define negotiation and syntacticization and also provide the theoretical and empirical background for the current study. After that, it will present the research questions and their respective hypotheses and describe the methodology that was used to address these questions. Next, the article will report the findings and then consider a few issues that were raised. Finally, the limitations of the study and several directions for future research will be discussed.

The construct of negotiation is defined as a learning process whereby: (a) The even flow of communication is interrupted as a result of real or anticipated difficulties of comprehension. Such problems could range from minor losses in clarity to complete breakdowns in communication; (b) Interlocutors collaborate in order to repair comprehension difficulties through a variety of interactional adjustments such as comprehension checks (*Do you understand?*), clarification requests (*What? Sorry?*), and confirmation checks (*Did you say apple?*).

Syntacticization is defined as a process of language change whereby morphosyntactic devices in an L2 increase over time and reliance on discourse-pragmatic context declines. This is a slight departure from the way syntacticization has been seen in creole studies (Sankoff 1972). These studies had conceived the process in terms of taking a particle that previously had morphological means becoming a syntactic function word. According to both definitions, syntax emerges from discourse (Givon 1979a, 1979b; Sato 1986) so that, for example, L2 learners will rely less on topic-comment and more on subject-predicate structures in their communication. To illustrate this, L2 learners would shift from utterances like *Philly it nice place-* to *Philly is a nice place*, (topic-comment to subject predicate) and from *She go store and she rich-* to *She go store because she rich* (loose coordination to tight subordination). In the next section, we turn to the theoretical and empirical motivations for this research.

Theoretical and Empirical Background

The theoretical motivation for the current study came from the view that negotiation could provide a context for key processes in language learning that would fuel the acquisition process (Pica 1994). Specifically, negotiation was believed to provide learners with opportunities for comprehensible input (Krashen 1981; Long 1981), modified output (Swain 1985, 1993, 1994), focus on form (Long 1992; Rutherford & Sharwood Smith, 1988, 1990; Schmidt & Frota 1986), and feedback (Schachter 1983, 1984, 1986, 1991; Lightbown & Spada 1990; White 1991). All of the above have been argued to be important processes for L2 learning. Given that negotiation can integrate these processes and provide them in a heightened form, I argue that negotiation will lead to general interlanguage change and provide a heightened form of syntacticization.

The empirical motivation for the study came from a re-analysis of negotiation and syntacticization studies. The re-analysis of negotiation stud-

ies provided some evidence that the linguistic modifications during negotiation of meaning could be regarded as a type of syntacticization, i.e., manipulation of interlanguage syntax. The re-analysis of syntacticization studies revealed the potential role that negotiation could have in assisting syntacticization. Both examinations suggested a role for negotiation in L2 learning that had hitherto been unexplored in the field of SLA. A few extracts from these re analyses are shown below.

Data from Long's (1981) study revealed that native speakers (NSs) could provide a type of input that had been syntacticized for L2 learners. An example of this is shown in (1):

(1)

NS:	Do you wanna hamburger?	[trigger]
NNS:	Uh?	[signal]
NS:	What do you wanna eat?	[response]
NNS:	Oh! Yeah, hamburger	[closure]

Example (1) shows that the NNS was given an alternative way to encode the L2. The DO + SVO structure of the trigger was modified to a Wh- + Sub/Aux inversion structure in the NS's response. Varonis and Gass (1988) provide evidence that NNSs can provide syntacticized input to each other, as shown in example (2):

(2)

NNSa:	He stands up? He stands, you mean? He stands up?	[trigger]
NNSb:	He stand. He is standing and—	[signal]
NNSa:	He is standing	[response]

In this case (2), NNSb provided a syntacticized version of her own utterance (*He stand. He is standing and*) which NNSa then incorporated (*He is standing*). In other words, NNSb's self-modification led to a syntacticized change in NNSa's original utterance, i.e., from present simple to present progressive tense. In another negotiation study, Pica, Holliday, Lewis and Morgenthaler (1989) reveal that learners may be given data not only about lexical or semantic features of an L2 but also about L2 structures. This could be valuable in building their interlanguage:

(3)

NNS:	Children they visit their uncle few days.	[trigger]
NS:	Their uncle has the children?	[signal]
NNS:	Their uncle has the children for a few days.	[response]

In example (3), the NNS is shown that *uncle* and *children* could function in either subject or object position in a sentence.

Re-analysis of data from a negotiation perspective not only revealed that syntacticization occurred but also suggested how the process might be assisted, something that was accounted for unsatisfactorily in previous

work (Perdue & Klein 1992; Traugott & Konig 1991). Negotiation may play an important role in syntacticization because it can make L2 forms salient to learners and therefore more easily acquired. Pica, Young, and Doughty (1987) have demonstrated how repetition and rephrasal occur in negotiation. Data from Sato's (1986) study of syntacticization over a ten-month period showed how a NS could repeat and rephrase a NNS's utterances as a syntacticized rather than a paratactic form.

In the next section, the research questions are described and their respective hypotheses are outlined.

Research Questions

This study addressed three research questions:

To what extent are linguistic modifications during negotiation evidence of syntacticization?

To what extent is there a differential effect for different types of negotiation moves on syntacticization?

To what extent does negotiation assist syntacticization over time?

To what extent are linguistic modifications during negotiation evidence of syntacticization?

The first research question arose from studies that have demonstrated, almost incidentally, that linguistic as well as interactional modifications occur during negotiation. The argument to be made here is that these linguistic modifications (the addition, deletion, and substitution of morphosyntactic features) could be considered a type of syntacticization. Some of the studies revealed that a heightened form of syntacticization is available in the context of comprehensible input (Long 1981; Long & Porter 1985; Pica 1987a; Pica & Doughty 1985a, 1985b; Pica, Young & Doughty 1987; Varonis & Gass 1988; Loschky 1994), and others in the context of comprehensible output (Swain 1985, 1993, 1994; Pica, Holliday, Lewis & Morgenthaler 1989).

In order to address this question, the following hypothesis was formulated:

Hypothesis 1: Learners who negotiated would manipulate interlanguage syntax, i.e., syntacticize.

The first hypothesis was motivated by a re-analysis of data from negotiation studies (Butterworth 1972; Brunak, Fain & Villoria 1976) demonstrating that NSs provide syntacticized models of NNS messages, and that NNSs syntacticized their own messages in response to NS signals. In addition, data from syntacticization studies reveal a potential role for negotiation in enabling learners to syntacticize (Sato 1986; Perdue & Klein 1992; Ramat 1992).

To what extent is there a differential effect for different types of negotiation moves on syntacticization?

The second research question arose from Swain's (1985) argument that certain negotiation moves were more likely to push learners to modify their interlanguage than others. For example, certain moves such as clarification requests (*What? Huh?*), signaled a problem in interaction yet supplied no (accurate) alternatives; in this way, learners were forced to modify their initial messages. Other moves, such as confirmation checks (*The boy went to the store?*), would be less likely to encourage learners to modify their messages because the NS provides an L2 model of original message in the form of a yes-no question. The following hypothesis was formulated to address this question:

Hypothesis 2: Learners who were given clarification requests as negotiation signals would manipulate their interlanguage syntax, i.e., syntacticize, more than those who were given signals through confirmation checks.

Hypothesis 2 was motivated by data from Pica (1987b), Pica, Holliday, Lewis and Morgenthaler (1989) and Nobuyoshi and Ellis (1993). These studies provided evidence suggesting that clarification requests led to more manipulation of learners' interlanguage than did other types of negotiation moves. Therefore, it was predicted that learners who were given clarification requests as negotiation signals would add, delete, and substitute their interlanguage syntax more than those who had been given confirmation checks.

To what extent does negotiation assist syntacticization over time?

The third research question was based on the view that negotiation provides a heightened type of comprehensible input, modified output, focus on form, and feedback, all of which have been claimed as vital for interlanguage change and L2 learning (Krashen 1981; Long 1981; Swain 1985, 1993, 1994; Long 1992; Rutherford & Sharwood Smith 1988; Schmidt 1990; Schmidt & Frota 1986; Schachter 1983, 1984, 1986, 1991; Lightbown & Spada 1990; White 1991). The argument to be made here was that negotiation, therefore, should be able to assist syntacticization as one part of the L2 learning process. To address this question, the following hypotheses were advanced:

Hypothesis 3a: Learners who manipulated their interlanguage syntax, i.e., syntacticized, during negotiation would continue to syntacticize over time.

Hypothesis 3a was motivated by evidence from Day and Shapson (1991) and Lightbown and Spada (1990) that immediate posttest gains by experimental treatment groups had held over time as measured by delayed posttests. Learners in the experimental groups had participated in activities similar to negotiation and had outperformed the control groups on both immediate and delayed posttests. In addition, data from several negotiation studies suggested that gains from negotiation would hold over time (Nobuyoshi & Ellis 1993; Doughty 1992; Varonis & Gass 1994).

Subject's Pictures:

FIXED		FIXED			FIXED
	LOOSE		LOOSE	LOOSE	

Researcher's Pictures:

	FIXED		FIXED	FIXED	
LOOSE		LOOSE			LOOSE

Figure 1. Distribution of Fixed and Loose Pictures Between Subject and Researcher

Hypothesis 3b: Learners who manipulate their interlanguage syntax, i.e., syntacticized, during negotiation will syntacticize over time more than learners who were denied opportunities for negotiation.

Hypothesis 3b was based upon the view that negotiation could provide a heightened type of key processes in L2 learning and that the presence of these in negotiation would enable negotiators to syntacticize more over time than other learners (Krashen 1981; Long 1981; Swain 1985, 1993, 1994; Long 1992; Rutherford & Sharwood Smith 1988; Schmidt 1990; Schmidt & Frota 1986; Schachter 1983, 1984, 1986, 1991; Lightbown & Spada 1990; White 1991).

Methodology

The data was collected between November 1993 and June 1994 at a university with the assistance of six trained research assistants. An experimental pretest, posttest, delayed posttest design was used for the study. Researchers met one-on-one with each subject in the study for a period of approximately three to four weeks. Each session with the researcher was one hour in length and was held in a university computer laboratory. This resulted in a total corpus of 285 hours.

There were 19 subjects in the study, 10 males and 9 females, with an age range of 18 to 47. The first language backgrounds were Korean (12) and Japanese (7). All were college educated adults and had received EFL instruction for a range of 2-14 years prior to the study. The subjects were enrolled as ESL students at the English Language Program and placed in low-intermediate level classes. Their Michigan Placement Test scores ranged from 18 to 62.

Each student took a battery of a pretest, posttest and delayed posttests as shown below. These tests targeted tense and aspect and had been revised on the basis of results from an earlier pilot study. Although the time period between the pretest and posttest was only three weeks, it was believed that reordering the sequence of the tests would reduce possible practice effects. The delayed posttest was administered one week after the posttest.

Pretest:
1.Grammaticality Judgment (written)
2.Free Writing
3.Sentence Combination
4.Cloze (written)
5.Grammaticality Judgment (listening)
6.Sentence Imitation
7.Oral Interview

Posttest:
1. Free Writing
2. Grammaticality Judgment (listening)
3. Grammaticality Judgment (written)
4. Oral Interview
5. Sentence Imitation
6. Cloze (written)
7. Sentence Combination

Delayed Posttest:
1. Free Writing
2. Cloze
3. Oral Interview
4. Grammaticality Judgment (listening)

The typing instructor program for Macintosh SE/30 computers enabled the subjects to increase their typing speed and accuracy. Subjects were required to reach 15 w.p.m. for participation in the study. The Aspects 1.03 Program is a writing conference software package with a 'Chat Box' feature that allows participants to type messages to each other. A record of the interaction is displayed on the computer screen, and messages are instantly available to the interlocutor as soon as a participant hits the return key. Subjects were introduced to the 'Chat Box' feature in a discussion of hobbies and interests with a researcher. After the subjects were familiar with this type of interaction, the researcher introduced them to a practice task ,'The surprise visitor,' a two-way jigsaw task that had been developed in previous negotiation research (Pica, Lincoln-Porter, Paninos, & Linnell 1995). Both participants were divided by a screen and could not communicate with each other visually or orally. The task involved the retelling of a picture story and required collaboration on the part of both participants because each had a unique distribution of pictures as shown in Figure 1.

The tasks were primed for past tense with prompts such as "This is a story about a dragon that happened a long time ago." The researcher also reviewed potentially difficult lexical items prior to completion of the task.

Subjects were randomly assigned to four groups:

Group 1: Clarifiers (n = 5) - negotiation via clarification requests

Group 2: Confirmers (n=5) - negotiation via confirmation checks

Group 3: Interactors (n=5) - interaction without negotiation

Group 4: Gamers (n=4) - no interaction/negotiation (computer games only)

The Clarifiers were given negotiation only through clarification requests and the Confirmers only through confirmation checks. The Interactors were denied any opportunities to negotiate and the Gamers were denied opportunities for either interaction or negotiation, as they engaged in computer

(i) Clarifiers:

Learner:	*Researcher:*
The little boy goed home (trigger)	
	what? (clarification request signal)
The little boy going home (response)	
	Ok. So in the next event his father cooked some dinner (continuation move)

(ii) Confirmers:

Learner:	*Researcher:*
the little boy was wait for dog (trigger)	
	he was waiting for the dog? (confirmation check/signal)
yes (response)	
	Ok. So then the dog ran away. (continuation move)

(iii) Interactors:

Learner:	*Researcher:*
The dragon came fly down to earth	
	She started to look for some food
(trigger) what? (signal)	
	It doesn't matter. (denial of negotiation) here were some people in the village nearby. (continuation with narrative regardless)
The people liked dragon (continuation of narrative)	

(iv) Gamers: only participated in computer games during the treatment period, e.g., PhraseCraze, Hangman, Wheel of Fortune, etc.

Figure 2. Examples of Negotiation.

games throughout the time period. Examples of the treatment given for each group are given in Figure 2.

This data was coded using a framework for negotiation developed by Pica, Holliday, Lewis, Berducci, and Newman (1991) and by a framework designed specifically for the present study for syntacticization. The latter framework targeted the addition, deletion, and substitution of

morphosyntactic features such as verb and noun morphology, subordination, passivization, and gerundivization. For example, in the addition of verb morphology a learner could initially type *Gabrielle ride Philadelphia*, then researcher would signal with *What?*, and the learner might respond with an example of the deletion of subordination which could occur as: *Gabrielle rode to Philadelphia because she was excited* (Learner) —> *What?* (Researcher) —>*Gabrielle rode to Philadelphia. She was excited* (Learner).

Results

From Table1, we can see that the first research question (To what extent are linguistic modifications during negotiation evidence of syntacticization?) was answered in the affirmative. When syntacticized responses to the researcher's signals were examined, it was found that the mean syntacticized response was 0.2136 (approximately one fifth of all responses). For a response to be syntacticized, it was not necessary for the learner to produce an accurate L2 response. It was critical, however, that the response modified the trigger through the addition, deletion, or substitution of specific morphosyntactic features. Examples of how negotiation could assist syntacticization are given below. The bolded words are provided for clarity and were not bolded in the original transcripts.

(4)
NNS: **boat was moving and banp**
NS: sorry?
NNS: boat is up and doun and wave on water and banping
(From: Task 8 'Storm')

(5)
NNS: The wave to push a ship so the ship moved a lot
NS: sorry?
NNS: The ship very moved because the wave push to the ship
(From: Task 8 'Storm')

In example (4), the learner added *-ing* to the verb *banp* (possibly 'bump') in response to the researcher's request for clarification over an action occurring in the past (past progressive). In example (5), the learner manipulated subordinate and infinitive structures rather than verb morphology. The learner added a subordinate clause (*because the wave push to the ship*) in response to the researcher's signal (*sorry?*) in order to clarify the original trigger message. Furthermore, the learner switched the order of an infinitive verb from the trigger (*to push*) to the response (*push to*) resulting in the deletion of the infinitive.

The second research question (To what extent is there a differential effect for different types of negotiation moves on syntacticization?) was also answered in the affirmative. The hypothesis that learners who were given

Table 1. Summary of Findings: Research Questions, hypotheses, and Results

Research Questions and Hypotheses	Results
1. To what extent are linguistic modifications during negotiation evidence of syntacticization?	
Learners who negotiate will manipulate their interlanguage syntax, i.e. , they will syntacticize	**Supported**: Mean syntacticized response = 0.21.
2. To what extent is there a differential effect for different types of negotiation moves on syntacticization?	
Learners who are given clarification requests as negotiation signals will manipulate their interlanguage syntax, i.e., they will syntacticize more than those who are given signals through confirmation checks	**Supported**: Mean syntacticized response =0.30 (Clarifiers) vs. 0.12 (Confirmers). t--value = 3.90, d.f. = 8, significant at $p < 0.05$. **Rejected**: Mean Syntacticized T-units = 0.83 (Clarifiers) vs. 0.86 (Confirmers). t-value = 0.84, d.f. = 8, not significant at $p < 0.05$
3. To what extent does negotiation assist syntacticization over time?	
a. Learners who manipulate their interlanguage syntax , i.e., syntacticize, during negotiation will continue to syntacticize over time	**Supported** in Syntacticized responses over Times 2, 4, 6, & 8: F = 0.63, d.f. = 3, not significant at $p < 0.05$
b. Learners who manipulate their interlanguage syntax, i.e., syntacticize, during negotiation will syntacticize over time more than learners who are denied opportunities for negotiation	(i) **Rejected** in Syntacticized T-units over Times 2, 4, 6, & 8: Negotiators F=0.41, d.f =3. Interactors: F=1.23, d.f.=3. Both not significant at $p < 0.05$ (ii) **Rejected** in Instances of syntacticization per T-unit over Times 2, 4, 6, & 8: Negotiators: F = 0.68, d.f. = 3. Interactors: F = 1.63, d.f. 3. Both not significant at $p < 0.05$ (iii) **Rejected** in Clauses per T-unit over Times 2, 4, 6, & 8: Negotiators:F = 2.54, d.f. = 3. Interactors: F = 0.57, d.f. = 3. Both not significant at $p < 0.05$

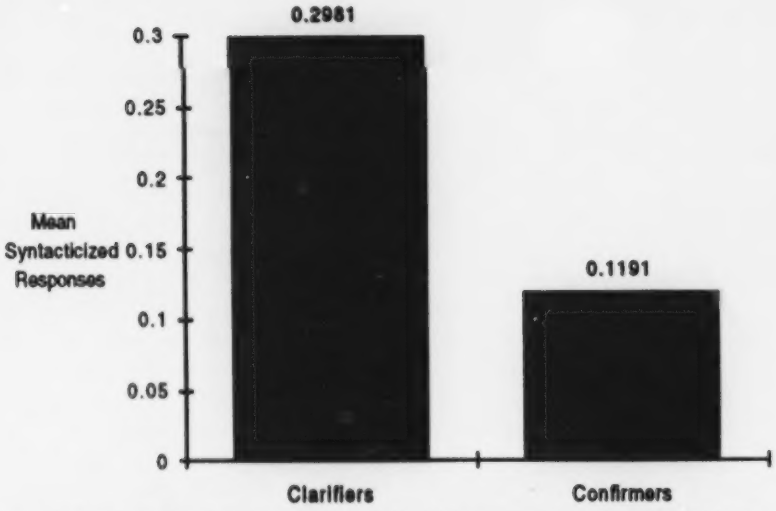

Figure 3. Comparison of Mean Syntacticized Responses by Clarifiers (N = 5) versus Confirmers (N = 5). This was significant at the $p < 0.05$ level.

clarification requests as negotiation signals would syntacticize more than those who were given signals through confirmation checks was supported, as shown in Figure 3.

From Figure 3, we can see that the Clarifiers syntacticized at almost three times the mean of the Confirmers. The following two examples show how Confirmers frequently behaved when they were given the researcher's signal.

(6)

NNS:	**And the boy planted many carot seed and the carrot grow up**
NS:	many carrot seeds?
NNS:	yes
NS:	Let's move on

(From: Task 1 'Carrot Seed')

(7)

NNS:	Girl didn't looking for her class. Girl keep look her paper.
NS:	Didn't look for her class?
NNS:	Yes, that girl continually stand on the aile
NS:	stood on the aisle?
NNS:	Yes, stood on the aisle
NS:	Ok

(From: Task 6 'School')

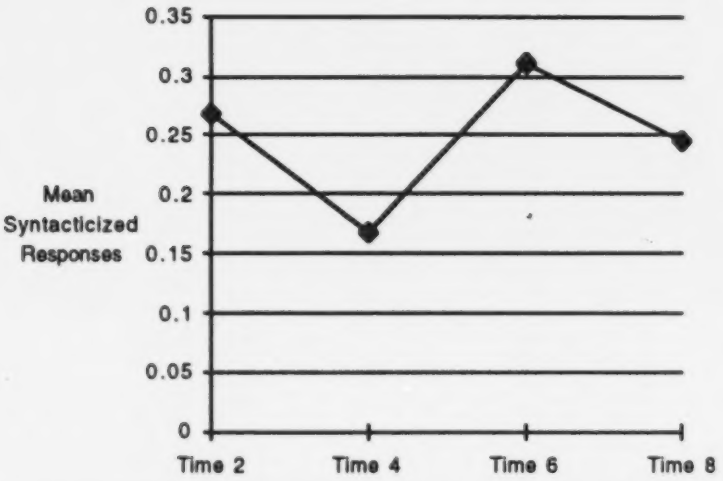

Figure 4. Mean Syntacticized Responses Over Time Periods 2, 4, 6 & 8 by Negotiators (N =10)

Example (6) shows that the researcher provided a syntacticized model to the learner of the trigger message by adding plural -s to a countable noun (*seed*). The learner acknowledged this in her response (*yes*), but did not modify the trigger herself. In example (7), the researcher's syntacticized model (*didn't look*) of the learner's trigger (*didn't looking*) was acknowledged (*yes*), but the learner did not manipulate her interlanguage syntax. In the next exchange, however, the learner did syntacticize her message in response to the researcher's signal (*stand —> stood*).

The third research question (To what extent does negotiation assist syntacticization over time?) was addressed with two hypotheses. Hypothesis 3a (Learners who manipulated their interlanguage syntax, i.e., syntacticized, during negotiation would continue to syntacticize over time) was supported. Figure 4 displays syntacticized responses over four time periods. Due to higher absenteeism by the learners on certain days, there was insufficient data to report for every time period. The Clarifiers and the Confirmers were combined into one group for this hypothesis (henceforth, the Negotiators).

From Figure 4, it is clear that the Negotiators proceeded in a stepwise fashion over time. Although they appeared to regress at Times 4 and 8, there was evidence of improvement at Time 6 and possibly at Time 10 as well. This type of variability is consistent with other SLA research on interlanguage development (Sharwood Smith & Kellerman 1989). Tests from an ANOVA showed no statistical significance for any time period. Therefore, we could say that learners continued to syntacticize at the level they began with. There was no significant change, either to increase or decrease syntacticization. Hypothesis 3a was thereby supported.

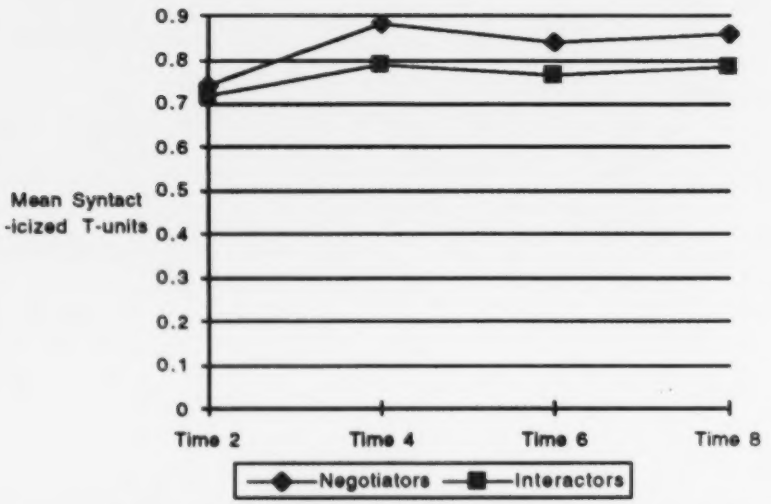

Figure 5. Comparison of Mean Syntacticized T-units by Negotiators (N =10) vs. Interactors (N =5)

This finding raised the question: Would the Interactors do as well as the Negotiators in syntacticizing over time? Hypothesis 3b had predicted that the Negotiators would syntacticize more over time than the Interactors. Mean syntacticized T-units were compared for both groups over time. The entire transcripts for the Negotiators and the Interactors were coded for evidence of syntacticization. T-units, one clause plus any attached or embedded subordinate clauses (Hunt 1970), were selected as an appropriate written unit of analysis, as they would reveal learners' abilities to consolidate more information within one grammatical unit by shifting from simple juxtaposition or loose coordination to subordination. Figure 5 displays the results of a comparison of syntacticized T-units by the Negotiators and the Interactors over time.

Figure 5 shows that both groups began at a similar level (about 0.7) but the Negotiators outsyntacticized Interactors at Times 4, 6, 8. Both groups followed a similar pattern: rising to Time 4, declining to Time 6, and rising slightly to Time 8. An ANOVA revealed no significant difference between the groups. Negotiators were not better than the Interactors at syntacticizing over time. The analysis was broadened with a comparison of both groups in terms of the mean instances of syntacticization per T-unit over time. Results of this analysis are reported in Figure 6.

From Figure 6, we can observe that the Interactors began at a slightly higher level than the Negotiators (1.0 vs. 0.9), but the Negotiators caught up by Time 6 (both approximately 1.1). The Negotiators peaked sooner than the Interactors (Time 6 vs. Time 8) and appeared to have a flatter profile overall than the Interactors. An ANOVA revealed no statistical differ-

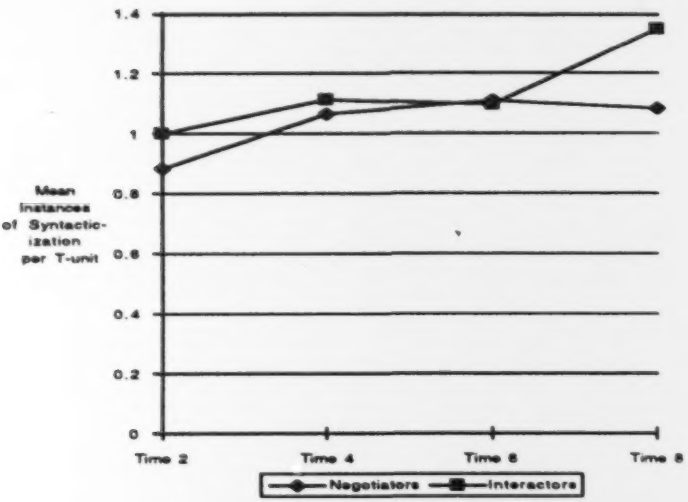

Figure 6. Comparison of Mean Instances of Syntacticization per T-unit over Time for Negotiators (N = 10) versus Interactors (N = 5)

ence between the groups over time. Syntacticization appeared to continue regardless of the type of discourse learners engaged in.

When group gain scores from the pretests to the posttests and delayed posttests were analyzed, no significant differences were obtained between the Clarifiers, Confirmers, Interactors or Gamers (see Figure 2). The tests had targeted tense and aspect, partly because the jigsaw tasks were primed for these structures and partly because tense and aspect figure so prominently in syntacticization. The results demonstrated that the experimental treatment had no immediate or delayed impact on learners' knowledge of tense and aspect. In the following section, we turn to several issues that were raised by these findings.

Discussion

In her work on SLA, Sato (1986) found limited evidence for syntacticization. Her learners had low frequencies of inflectional past tense verbs (*smashed*), more lexical past tense (*brought*) and adverbials (*yesterday*), some evidence of shifting from loosely coordinated propositions to subordinated propositions, but an absence of infinitival complements (*he wanted to go to the store)* and a near absence of relative clauses (*its about a boy who likes stories)* and gerundive complements (*he taught us about using computers)* Results from the present study, however, revealed that negotiation could assist syntacticization within a relatively short period of time and that a variety of syntacticized features were evident. In other words, there was evidence that syntacticization had occurred not only in terms of

Table 2. Postulated Intermediate Processes Within Syntacticization

Process	Description	Example
Level 1:		
Baso-syntactic	zero—>first syntax (word order)	(1)*pot break she* —> (2)*she break pot*
Level 2:		
Meso-syntactic	any syntax—>any other syntax (WO—>morph)	(3)*she pot breaked*—> (4)*she broke pot* —> (5)*she broked pot*
Level 3:		
Acro-syntactic	syntax 1—>syntax 1+ (morph—>adverb)	(6)*she broke pot cried* —> (7)*after she broke pot, she cried*

Note: —> indicates 'changes to'.

verb and noun morphology but also for subordinate, infinitival, and passive structures. What might account for this discrepancy?

We could argue that because negotiation was more intensive and more available under the specified experimental conditions, learners were more likely to syntacticize than under naturalistic conditions when negotiation is far less frequent. This line of reasoning might be sufficient were it not for the fact that Sato's learners were at a lower level of proficiency than those in the present study. Therefore, a more profitable explanation might lie in Sato's own critique of Givon's original framework in which she suggested that syntacticization, although not necessarily a smooth linear process, might proceed through a series of intermediate stages. If true, this could account for the apparent disparity in results between Sato's study and the present research, as her learners were at the beginner rather than intermediate level. Table 2.0 displays postulated intermediate processes within syntacticization.

As shown in Table 2, three stages were postulated for syntacticization. The baso-syntactic would entail a shift from zero to first syntax, the meso-syntactic from any syntax to any other syntax, and the acro-syntactic from syntax 1 to syntax 1+. Stages might overlap to some extent as learners progressively syntacticized their interlanguage. Table 3.0 shows some examples from further analysis of the data based upon intermediate stages of syntacticization.

When the data was re-analyzed, no cases of baso-syntactic change were found, but there were 57 cases out of 79 that were meso-syntactic (mean 0.7215) and 22 out of 79 that were acro-syntactic (mean 0.2785). The baso-syntactic example in Table 3.0 shows that 3rd *-s* was added to the verb *dig* but subsequently dropped. Word order had already been established in this learner's interlanguage. In the acro-syntactic example, *becaus* was added in response to a signal (*I do not understand*). Here the learner moved the independent clause in the trigger to a dependent clause in the response.

Note also that a meso-syntactic process occurred simultaneously as *was sapray* was modified to *sapraing*. On the basis of this postulated description, then, we might argue that Sato's subjects were probably at the baso-syntactic level and those in the present study were predominantly at the meso-syntactic level. Learners at the baso-syntactic level would probably require greater amounts of comprehensible input due to their limited L2 resources, but those at the meso-syntactic level would need more negotiation in order to manipulate their increasing L2 resources. We could hypothesize that learners at the acro-syntactic level might need greater correction to ensure more accurate use of their fairly developed L2 repertoire.

A second issue that was raised by the current research was the relationship between syntacticization and L2 development. This study showed that negotiation could stimulate and continue syntacticization over time, but appeared to have no observable impact on knowledge of tense and aspect (as shown by lack of significant difference in gain scores between groups on pre/posttests). Does that mean syntacticized changes require more time or perhaps different types of discourse to impact interlanguage systems?

Although data from the present study might suggest that negotiation was inadequate to make a significant impact, such a view is premature. It remains arguable that negotiation made impact on syntacticization and that it could affect L2 development; however, there are three reasons why this was not evident in the data. First, the validity of the tests used in the study was somewhat limited. The tests targeted only tense and aspect, but a broad range of syntacticized structures were evident in negotiations (relative clauses, prepositions, possessives, Q types , etc.). Only 15.04% of negotiations were over tense and aspect; therefore, 84.96% of negotiations were over other forms (lexical, other structural).

Second, SLA research has shown that interlanguage change may not necessarily follow a linear path (Meisel, Clahsen, & Pienemann 1981). Klein (1986) has argued that interlanguage change might be irregular as the pressure to analyze an L2 and to synthesize it into a learner's interlanguage system might vary considerably. According to another viewpoint, it is conceivable that unanalyzed chunks from the L2 could serve as input for learners' developing interlanguage systems later on (Lightbown 1994).

Several recent empirical studies have found that reprocessed interlanguage could indeed be maintained over time. In a study of ESL learners, Oliver (1994) found that learners incorporated only ten percent of recasts by NSs because (a) NSs continued the conversation, thereby denying the NNS any opportunities for incorporation, and (b) learners were given yes-no questions which, again, had the effect of denying them opportunities for interlanguage manipulation. Her findings suggest that with more opportunities to manipulate interlanguage within conversations learners would probably incorporate more.

Swain (1994) cites two studies that also provide evidence for the view that learners who manipulate their interlanguage could benefit over the

Table 3.. Examples of Subprocesses of Syntacticization

Sub-process	Learner	Researcher
Meso-Syntactic	*Task: 'Carrot Seed Story'*	
	he dig the carrot plant up and he is the carrot is bring hand car	
		Please explain what you mean
	he digs the carrot plant up and the carrot separated the bruch	
		what?
	he dig up the soil and put the carrot plant out the ground	
		ok
Acro-Syntactic	*Task: 'Baseball Game'*	
	ball is going to elevter	
		I do not understand
	boy and dog was sapray becaus ball was goon	
		sorry?
	ball on the elevter boy looking and sapraing	
		I understand. ok.

long term. La Pierre (1994) studied French L2 in a grade 8 immersion classroom over one month. She found that negotiation over language form led to 80% correct solutions on a test targeted on those structures a week later. Donato (1994) investigated American college students in French L2 classrooms. She observed that after students had engaged in scaffolded discourse 75% of those structures used were produced correctly one week later.

Summary, Limitations, and Future Research

This article has reported the results of an experimental study designed to investigate the potential role of one type of social interaction in the process of syntacticization. The major findings are that negotiation could provide a context for syntax learning in an L2 and that it could continue to do so over time. However, negotiation was no better at this than was social interaction where opportunities for negotiation were denied. Also, negotiation made no observable impact on learners knowledge of tense and aspect over the duration of the study. When different types of negotiation moves were examined, it was found that clarification requests were more effective than confirmation checks in assisting syntacticization in short periods of time but that over longer stretches this effect was annulled.

Future research could examine the impact of a variety of types of discourse at low, intermediate, advanced levels on syntacticization. The effectiveness of negotiation versus correction could be investigated, for example, in relation to longitudinal syntacticized change. Another area for work, as mentioned above, is in the development of tasks that are structure-focused yet meaningful. Some preliminary work has been accomplished, but a great deal remains to be done (Fotos & Ellis 1991; Mackey 1994, 1995; Loschky & Bley-Vroman 1990). Negotiation has considerable potential for exploring these dimensions of the L2 learning process.

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Julian Linnell is a Lecturer in Educational Linguistics and ESL at the University of Pennsylvania. He has taught courses in TESOL methods, sociolinguistics, and language for specific purposes in the UK, USA, and the People's Republic of China. His research interests include second language acquisition, CALL, and ESL/EFL methodology.

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